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ABSTRACT

The desire to integrate technology within the PreK-12 educational environment is a noble endeavor and may lead to the enhancement of student achievement. Teacher candidates are constantly striving to understand the learning environment and to meet these expectations, but do not have models from which they may glean appropriate knowledge, conceptual and instructional frameworking. The integration of instructional technology within the methods coursework aids the teacher candidates through a model of appropriate technology integration within a classroom environment, as well as further enhances their own achievement. This paper discusses significant elements associated with the integration of technology within a learning environment. Discussion includes: information versus instruction; a definition of instructional technology; teacher-centered versus learner-centered learning environments; levels of World Wide Web integration; professional development opportunities model; learning environment interactive activities; faculty resistance; faculty implementation barriers; and rewarding faculty efforts. (Contains 5 references.) (Author/AEF)

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The Design of a Supportive Faculty Development Model: The Integration of Technology Within the University Faculty's Teacher Candidate Coursework

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Abstract: The desire to integrate technology within the PreK-12 educational environment is a noble endeavor and may lead to the enhancement of student achievement. Teacher candidates are constantly striving to understand the learning environment and to meet these expectations, but do not have models from which they may glean appropriate knowledge, conceptual and instructional frameworking. The integration of instructional technology within the methods coursework aids the teacher candidates through a model of appropriate technology integration within a classroom environment, as well as further enhances their own achievement.

Introduction

The integration of technology within a learning environment, especially significant within a methods course for teacher candidates, emphasizes the significance of a student-centered focus. However, many methods university faculty have not had the opportunity to research the integration of technology at any significant length. This session offers methods faculty the opportunity to work with an instructional technologist who specializes in the integration of technology within a learning environment, to discuss and analyze significant elements associated with the integration of technology within a learning environment, and to critically consider the beginnings of a technology integration action plan for teacher candidate methods courses.

Information Versus Instruction

Information is a term referenced when discussing the knowledge communicated or received concerning a particular fact or situation; however, instruction is a term referenced when discussing the particular, deliberate composition of learning situation and environment that have been specifically formulated to support the realization of the learning objective or goal. Through this clearly delineated formulation towards the support of instruction is the opportunity towards the integration of instructional technology as a tool towards this instructional accomplishment.

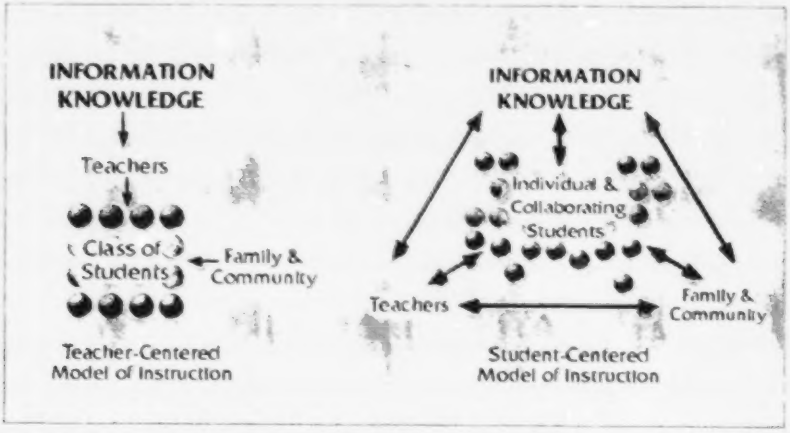
Instructional Technology: A Definition

Instructional technology has been defined numerous ways, but the final delineation of instructional technology is towards the successful support of the learning goals for each delineated lesson. The Association for Educational Communications and Technology (AECT) has adopted the following definition of instructional technology: "Instructional Technology is the theory and practice of design, development, utilization, management and evaluation of processes and resources for learning" (Seels & Richey, 1994). Through consideration of this definition, a clear understanding of the roles and processes pertaining to instructional technology can and may appropriately occur within an educational environment.

Teacher-Centered Versus Learner-Centered Learning Environments

Models of instruction are important elements towards a clear understanding of the philosophical and conceptual theoretical underpinnings within the learning environment. For this reason two main

emphases, related to the structure of the learning environment and the information interrelated to such an arrangement is situated within such an environment, are noted; the teacher-centered model of instruction and the student-centered model of instruction. Below is a graphic clearly delineating the two significant models of instruction.



As both models of instruction are imperative towards successful learning environments, the significant shift between the two is of a philosophical nature. Instructional technology is an important element within both learning environments, as the interactive element of the technology may be integrated in a teacher-centered or a student-centered situation.

Levels of World Wide Web Integration

As the World Wide Web (Web) becomes a more important element towards the creation and manipulation of learning environments, it follows that the Web will be integrated into the learning environment at numerous levels. Following are ten levels of Web integration:

Level 1 Marketing/Syllabi via the Web
Level 2 Student Exploration of Web Resources
Level 3 Student Generated Resources Published on Web
Level 4 Course Resources on Web
Level 5 Substantive and Graded Web Activities
Level 6 Electronic Conferencing Course Activities Extending Beyond Class
Level 7 Repurpose Web Resources
Level 8 Web as an Alternative Delivery System for Resident Students
Level 9 Entire Course on the Web for Students Located Anywhere
Level 10 Course Fits Within Larger Programmatic Web Initiative
(Bonk, Cummings, Hara, Fischler & Lee, 2001)

Each level delineates the level of integration of Web resources, which in turn impacts the learning environment and the model of instruction implemented within the learning environment.

Professional Development Opportunities Model

An appropriate model towards the appropriate and successful implementation of professional development opportunities for university faculty must be delineated so as to support the university faculty's efforts towards the integration of instructional technology into the university coursework. Further, teacher candidates must have instructional technology appropriately modeled for them within their methods courses so as to develop a conceptual framework of understanding within specific specialization areas. As such, the following model for professional development opportunities is offered.

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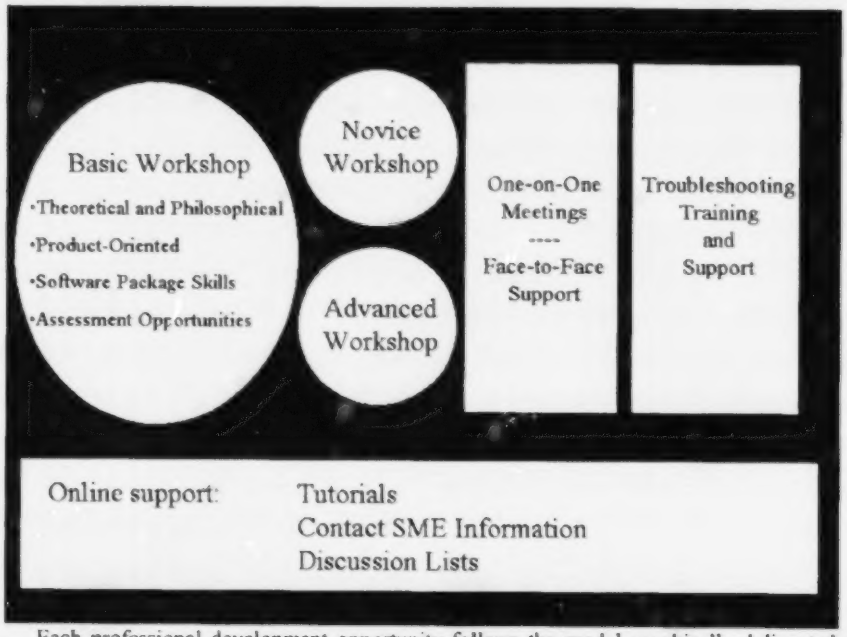

Each professional development opportunity follows the model graphically delineated above. An introductory, basic workshop is offered to university faculty that is based upon a specific subject. Once the attendees have attended the basic workshop, then they have the option to attend a novice workshop that is actually the basic workshop in a smaller group setting, or an advanced workshop that delves further into the subject matter from the basic workshop opportunity. Additional support is necessary through one-on-one, face-to-face support meetings, as well as hardware and software troubleshooting training and support. While each of the professional development opportunities are occurring there is a level of online support that should remain an undercurrent, consistently available to the university faculty, that consists of tutorials, subject matter experts that are available for support and information, as well as discussion lists wherein the university faculty can discuss issues from the professional development opportunities and to develop a sense of community. That the university faculty are not, in fact, alone trying to integrate the instructional technology into their courses. Additionally, the online support further enables the conceptual framework development of the university faculty.

Learning Environment Interactive Activities

As university faculty delve further into the integration of instructional technology within the teacher candidate coursework, there are specific aspects that must be considered within the learning environments. The following interactive activities are important within any learning environment, whether it be face-to-face, Web-enhanced or Web-based:

- Learner – Content
- Learner – Interface
- Learner – Instructor
- Learner – Learner
- Learner – Self
- Learner – Community
- Instructor – Community
- Instructor – Content
- Instructor – Interface
- Instructor – Self

Each of the interactive activities should be carefully considered through out the instructional design of the coursework and appropriately integrated so as to ensure the successful and appropriate attainment of the course, as well as unit, objectives.

Faculty Resistance

University faculty have time-honored traditions associated with their instructional practices and there is the possibility that faculty may not find the technological innovations to be appropriate within their course learning environment. However, there is the possibility that university faculty may find it an uncomfortable proposition to consider the introduction of instructional technology into their coursework's instructional design. Fear factors are apparent and real for numerous persons who have the opportunity to integrate technology into their instruction. For example, the following factors may have an impact upon the integration of instructional technology. The fears associated with:

- change
- time commitment
- appearing incompetent
- inadequate instructional technology knowledge base
- technological lingo
- technological failure
- not knowing where to begin
- having to move backward to go forward
- reprisals (Rutherford & Grana, 1995)

are real and clear for numerous university faculty. These can not be overemphasized and must be carefully and delicately managed so as to ensure the university faculty will consider further implementation of instructional technology into the teacher candidate's methods coursework.

Faculty Implementation Barriers

As is well known, opportunities towards professional development opportunities have at least a few implementation barriers. Following are a few university faculty implementation barriers that offer obstacles for consideration.

- Specialization more important than technology
- Lack of knowledge and support personnel
    - Hardware
    - Software
- Time commitment
- Difficulty maintaining subject matter currency
- Technology integration viewed as risky
- Frustration surrounding technology use (Roberts & Ferris, 1994)

Each of these implementation barriers should be considered before professional development opportunities are offered, as the significant impact each aspect offers can not be overemphasized.

Reward Faculty Efforts

Rewarding university faculty efforts towards the integration of instructional technology into the teacher candidate methods coursework so as to model the appropriate and successful implementation of instructional technology into the specialization areas takes time and effort on the part of the faculty. Therefore, consideration towards faculty efforts and reward structures may be appropriate. Following are some areas of consideration:

- Displays of Admiration for Innovative Efforts
- Time Drain Compensation
- Positive Tenure Review Impact
- Incentive Programs
    - Interest
    - Motivation
- Financial Support
    - Hardware
    - Software
    - Course Buy-Out

The element of time is an important aspect for all university faculty due to the teaching, research and service triad of obligation and interest for each university faculty member. There are four main groups of university faculty who must be addressed through out the integration of instructional technology into the university coursework venture. The groups of faculty to address are:

- Early Innovators
- Cautious Innovators
- Hangers-On
- Negative Nay Sayers

Acknowledgement of the university faculty member's efforts also impacts not only the faculty implementing the instructional technology efforts within the methods coursework, but also the university faculty who are carefully considering the time and efforts towards integrating instructional technology into their courses. Positive efforts should be admired and rewarded at every opportunity.

Conclusion

The design, development and implementation of a supportive faculty development model is of utmost importance to the teacher candidates graduating from each teacher preparation unit. The integration of technology within the university faculty's teacher candidate coursework should be carefully considered and implemented with a clear understanding of goals and expected outcomes over a series of supportive professional development opportunities. The longitudinal study of university faculty progress is of utmost importance towards the further understanding and consideration of instructional technology, its integration and implementation within the teacher candidate's plan of study.

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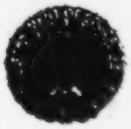

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